UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/100,595	06/19/98	BIGUS J	IBM/04B

LM11/1004

SCOTT A STINEBRUNER
WOOD HERRON AND EVANS
2700 CAREW TOWER
CINCINNATI OH 45202

EXAMINER	
STARKS,W	
ART UNIT	**PAPER NUMBER**
2762	10

DATE MAILED: 10/04/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/100,595	BIGUS, Joseph Phillip et al.
Examiner	**Group Art Unit**
Wilbert L. Starks, Jr.	2762

☒ Responsive to communication(s) filed on *Jul 6, 1999* .

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *30-32, 36-45, 47-60, 62-74, and 76-80* is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *30-32, 36, 37, 39-45, 47-57, 59, 60, 62-66, 68-74, and 76-80* is/are rejected.

☒ Claim(s) *38, 58, and 67* is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____ .

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____ .

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). *7*

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

Response to Amendment

1. Applicant cancels claim 46, added new claims 49-80, amended claims 30, 47-49, 62-64, 76-77, and further canceled new claims 61 and 75. Since Applicant's amendments filed 24 March 1999 were, unbeknownst to the Examiner, in processing when the first action was sent by Examiner on 25 March 1999, this action will address those issues as well as issues raised in yet a third amendment that was also filed in the interim. Consequently, this *particular* action must be considered **NON-FINAL.** Presently, claims 30-32, 36-45, 47-60, 62-74, and 76-80 are under consideration.

2. The 35 U.S.C. §101 rejection regarding claims 30-32, 36-45, and 47-48 is withdrawn. Applicant cites claim 13 in the "Automated Manufacturing Plant" example in the Guidelines, to show that computer programs embodied on "signal bearing media" are statutory. Applicant is correct in his showing that "signal bearing media" are an acceptable subset of computer-readable media. On this basis, the rejection of claims 30-32, 36-45, and 47-48 is withdrawn.

Admissions on the Record

3. An important comment must be made regarding Applicant's claimed point of novelty regarding the use of intelligent agents to "conduct negotiations in an electronic commerce

application." Examiner points out that claims 30, 49, 64, and 78 contain an admission by applicant that the claimed point of novelty is "common" in the computer art:

> "49. (Once Amended) ...wherein the plurality of program modules are each configured to handle a **common computer task that includes conducting negotiations in an electronic commerce application; and ..." (emphasis added.)**

In other words, this is an *admission on the record* that the claimed point of novelty is *"common in the art"* and, on that basis, is held by Examiner to be *obvious under 35 U.S.C. §103(a)*, by definition. Accordingly, Examiner accepts the admission and applies it to the examination to all relevant claims in this application.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 30-32, 36-45, 47-60, 62-74, and 76-80 are rejected under 35 U.S.C. 103(a) as being obvious over Atkins (U.S. Patent Number 5,644,727; Dated 07/01/97; class 705; subclass 40).

Atkins, originally filed on 6 December 1994, discloses a system of autonomous agents that conduct negotiations in an electronic commerce application. It utilizes the intelligent agents supplied by the much older prior art "Telescript" language that was devised by "General Magic". Even though General Magic's web site is not used as prior art in this action, it is of primary relevance to the issues raised in the application and Examiner, accordingly, gives that site to Applicant here as "http://www.genmagic.com/".

Claim 30

5. Claim 30's "intelligent agent", "autonomy" for the agent, and are all anticipated by Atkins, col. 35, lin. 19-27. "Autonomy" for the "autonomous agent" is inherent in the art and is anticipated by Maes, Pattie, presentation: *Software Agents*, slide 5 of 144; presented in Chicago in 1997; presently displayed at http://pattie.www.media.mit.edu/people/pattie/CHI97/sld005.htm.

Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Atkins in view of applicant's admission that negotiation between agents is a task that is common in the art as well as *Software Agents*, slide 47 of 144 which shows that Telescript agents were designed to negotiate or "conduct business" on behalf of the user. Telescript is one of the fundamental tools of the art and people of ordinary skill in the art know of the capability of Telescript agents to negotiate on behalf of the user. Official notice is taken of this aspect of Telescript.

Atkins discloses the conventional use of software agents to conduct electronic commerce.

Atkins, however, does not expressly disclose the use of an agent to negotiate on the user's behalf.

Software Agents discloses that the use of negotiations between agents to implement electronic commerce.

It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to use the negotiations between agents from *Software Agents* in Atkins.

Motivation -- Negotiations between agents would have been a highly desirable feature in the software agent art due to its ability to conduct business at remote locations and *Software Agents* recognizes that the conduct of business at remote locations would be expected when the negotiations between agents of *Software Agents* is utilized in the art of Atkins.

Therefore, it would have been obvious, to one of ordinary skill in the art, to combine *Software Agents* with Atkins to obtain the invention as specified in claim 30.

Claims 31 and 32

Claim 31's transmission type signal bearing media is anticipated by Atkins, col. 39, lin. 40-41.

Claim 32's recordable signal bearing media is anticipated by Atkins, col. 39, lin. 40-41.

Claim 36

Claim 36's "evaluation module" is anticipated by Atkins, col. 29, lin. 62-63. The "evaluation module" is inherent in the genetic programming art. Koza, John R., *Genetic Programming*, The MIT Press, 1993, page 77(step (2)(a)).

Claim 37, 56, and 66.

Claim 37, 56, and 66's "reinforcement learning module coupled to the evaluation module -- it adaptively selects program modules based upon the performance of the plurality of program modules in handling the computer task" is anticipated by Atkins, col. 29, lin. 62-63. The "reinforcement learning" step is inherent in the genetic programming art. Koza, John R., page 77(step (2)(a)).

Claim 39

Claim 39's "evaluation module steps:"

"Retrieve information for a selected computer task;" is anticipated by Atkins, col. 29, lin. 62-63. This step is inherent in the genetic programming art. Koza, John R., page 77(step (2)(a)).

"determine a selected value for the selected computer task;" is anticipated by Atkins, col. 29, lin. 62-63. This step is inherent in the genetic programming art. Koza, John R., page 77(step (2)(a)).

"select as the selected program module one of the plurality of program modules which is matched with the selected value of the objective criteria;" is anticipated by Atkins, col. 29, lin. 62-63. This step is inherent in the genetic programming art. Koza, John R., page 77(step (2)(a)).

Claim 40, 53, and 69.

Claim 40, 53, and 69's "evaluation module is implemented in an agent manager" is anticipated by Atkins, col. 29, lin. 62-63. This step is inherent in the genetic programming art. Koza, John R., page 77(step (2)(a)).

Claim 41 and 70

Claim 41 and 70's "evaluation module is implemented in an intelligent agent" is inherent in the genetic programming art. Koza, John R., page 77(step (2)(a)).

Claim 42, 50, and 71

The following steps are inherent in the art:

The intelligent agent "includes only" (comprises?/consists of?) the selected program module from the plurality of program modules; is anticipated by Atkins, col. 29, lin. 62-63. This step is inherent in the genetic programming art. Koza, John R., page 77(step (3)).

The evaluation module therein constructs the intelligent agent using the selected program module is anticipated by Atkins, col. 29, lin. 62-63. This step is inherent in the genetic programming art. Koza, John R., page 77(step (3)).

Claim 43, 51, and 72

The intelligent agent including each of the plurality of program modules; is anticipated by Atkins, col. 29, lin. 62-63. This step is inherent in the genetic programming art. Koza, John R., page 77(step (3)).

The evaluation module executes only the selected program module to handle the computer task is anticipated by Atkins, col. 29, lin. 62-63. This step is inherent in the genetic programming art. Koza, John R., page 77(step (3)).

Claim 44, 54, and 73

The plurality of program modules are additive program modules; is a limitation that is inherent in the art. Koza, John R., page 343. The agents in that example are simulating ants and were asked to solve the problem of what to do if they found food that was so far away from the nest that the pheromone trail back to the food would decay before they returned. The agents solved the problem by using a "bucket brigade"-type strategy so that the pheromone trail stayed intact for each segment of the "bucket brigade." As in the claimed invention, these agents cooperated and are "additive program modules." This textbook example is inherent in the art.

The evaluation module selects a subset of the plurality of program modules to handle the computer task is anticipated by Atkins, col. 29, lin. 62-63; Koza, John R., page 343.

Claim 45, 55, and 74

The plurality of program modules are alternative program modules, and is anticipated by Atkins, col. 29, lin. 62-63; Koza, John R., page 91.

The evaluation module selects only one of the plurality of program modules to handle the computer task is anticipated by Atkins, col. 29, lin. 62-63. This step is inherent in the genetic programming art. Koza, John R., page 77(step (3)).

Claim 47, 62, and 76

The plurality of program modules includes a semi-autonomous program module, a fully autonomous program module, and a fully dependent program module is anticipated by Atkins, col. 29, lin. 62-63. This step is inherent in the genetic programming art. Maes, Pattie, presentation: *Software Agents*, slide 62 of 144; presented in Chicago in 1997; presently displayed at http://pattie.www.media.mit.edu/people/pattie/CHI97/sld062.htm; viewed 9/21/99 11:05 AM.

Claim 48, 63, 77, 79, and 80

The objective criteria "includes" a risk that a dispatched agent is subjected to in negotiations is anticipated by Atkins, Abstract. This step is inherent in the genetic programming

art as applied to electronic commerce. No electronic commerce mechanism would succeed if it could not be trusted and if it could not dynamically assess the risks inherent in its transactions. "Risk" may be measured in many ways. The MIT Media Laboratory uses "Reputation Mechanisms" to determine if the proposed transactions are sufficiently low in risk. Zacharia, Giorgios and Maes, Pattie, *MIT Media Lab: Software Agents Group: Projects*, Website: http://agents.www.media.mit.edu/groups/agents/projects/, 1997, p. 3 of 5, viewed:9/21/99 10:18 AM.

Claim 49, 64, and 78.

Claim 49's, 64's, and 78's "intelligent agent", "autonomy" for the agent, and are all anticipated by Atkins, col. 35, lin. 19-27. "Autonomy" for the "autonomous agent" is inherent in the art and is anticipated by Maes, Pattie, presentation: *Software Agents*, slide 5 of 144; presented in Chicago in 1997; presently displayed at http://pattie.www.media.mit.edu/people/pattie/CHI97/sld005.htm.

These claims are rejected under 35 U.S.C. 103(a) as being unpatentable over Atkins in view of applicant's admission that negotiation between agents is a task that is common in the art as well as *Software Agents*, slide 47 of 144 which shows that Telescript agents were designed to negotiate or "conduct business" on behalf of the user. Telescript is one of the fundamental tools of the art and people of ordinary skill in the art know of the capability of Telescript agents to negotiate on behalf of the user. Official notice is taken of this aspect of Telescript.

Atkins discloses the conventional use of software agents to conduct electronic commerce.

Atkins, however, does not expressly disclose the use of an agent to negotiate on the user's behalf.

Software Agents discloses that the use of negotiations between agents to implement electronic commerce.

It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to use the negotiations between agents from *Software Agents* in Atkins.

Motivation -- Negotiations between agents would have been a highly desirable feature in the software agent art due to its ability to conduct business at remote locations and *Software Agents* recognizes that the conduct of business at remote locations would be expected when the negotiations between agents of *Software Agents* is utilized in the art of Atkins.

Therefore, it would have been obvious, to one of ordinary skill in the art, to combine *Software Agents* with Atkins to obtain the invention as specified in claims 49, 64, and 78.

Claim 52

The selecting step is performed by the intelligent agent" is anticipated by Atkins, col. 29, lin. 62-63. This step is inherent in the genetic programming art. Koza, John R., page 77(step (3)). The disclosure in Koza is broad enough to include the implementation of the "selecting step" via the agent itself. In fact, in order to have a truly autonomous and mobile agent, one must include this step as a facility local to the agent so it can adapt to situations in real-time. The only

alternative is the establishment of support sites the agent would have to go to every time it needed to perform the task. This is a truly unreasonable expense for such a simple task that in all common sense from the engineering standpoint should be performed locally with the agent.

Claim 57

Obtaining performance information relating to the performance of the selected program module in handling the computer task; This step is inherent in the genetic programming art. Koza, John R., page 77(step (2)(a)).

Supplying the performance information to the reinforcement learning algorithm. This step is inherent in the genetic programming art. It is the creation of a "fitness measure." Koza, John R., page 77(step (2)(a)).

Claim 59, 65, and 68.

Matching each of the plurality of program modules with a value of the objective criteria; determining a selected value of the objective criteria;

Selecting as the selected program module a program module matching the selected value of the objective criteria. This step is inherent in the genetic programming art. It is the creation of a "fitness measure." Koza, John R., page 77(step (2)(a)).

Claim 60

The selecting step further includes the step of retrieving information for a selected computer task; This step is inherent in the genetic programming art. It is the creation of a "fitness measure." Koza, John R., page 77(step (2)(a)).

The determining step determines the selected value of the objective criteria using the retrieved information. This step is inherent in the genetic programming art. It is the creation of a "fitness measure." Koza, John R., page 77(step (2)(a)).

Allowable Subject Matter

6. Claims 38, 58, and 67 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A. Atkins (U.S. Patent Number 5,644,727; Dated 07/01/97; Class 705; Subclass 40) discloses a system for the operation and management of one or more financial accounts through the use of digital communication and computation system for exchange, investment and borrowing.

B. Koza, John R., *Genetic Programming*, The MIT Press, 1993.

C. Maes, Pattie, *Software Agents*, slide 62 of 144; presented in Chicago in 1997; presently displayed at http://pattie.www.media.mit.edu/people/pattie/CHI97/sld062.htm; viewed 9/21/99 11:05 AM.

D. Giorgios and Maes, Pattie, *MIT Media Lab: Software Agents Group: Projects*, Website: http://agents.www.media.mit.edu/groups/agents/projects/, 1997, p. 3 of 5, viewed:9/21/99 10:18 AM.

E. Chavez, A. and Maes, P., Proceedings of the First International Conference on the Practical Application of Intelligent Agents and Multi-Agent Technology, Blackpool, U.K.:Practical application Company, 22-24 April 1996, p. 75-90.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wilbert L. Starks, Jr. whose telephone number is (703) 305-0027. Alternatively, inquiries may be directed to Supervising Patent Examiner Tariq Hafiz whose telephone number is (703) 305-9643.

wls

September 28, 1999

Supervisory Patent Examiner
Technology Center 2700